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ABSTRACT

Different approaches to economic assistance for developing nations have been used over the years. These basically involved building institutional structures such as those found in developed nations and the introduction of investments and industrialization. The Interuniversity Research Program on Institution Building studied various aspects of institution-building, development, and problems encountered in building agricultural research, teaching, and service institutions in developing countries. The need for more knowledge of technical assistance methodology resulted in various research projects to study ways of improving technical assistance and institution-building based on a new model. A design perspective approach to institution-building concerns effective arrangements within the domain of technical assistance encompassing implementation and evaluation. Designing is a unique process for a particular problem where technical assistance is often affected by the characteristics of agencies and enviornments. Questions concern the applicability of the design approach on a practical level, its basic assumptions, and what impact it might have on the field of education. (EC)

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Institutional Building In Technical Assistance

The Design Perspective And Some Implications For Research And Development In Vocational Education

William Siffin

Occasional Paper 8

THE CENTER FOR VOCATIONAL EDUCATION
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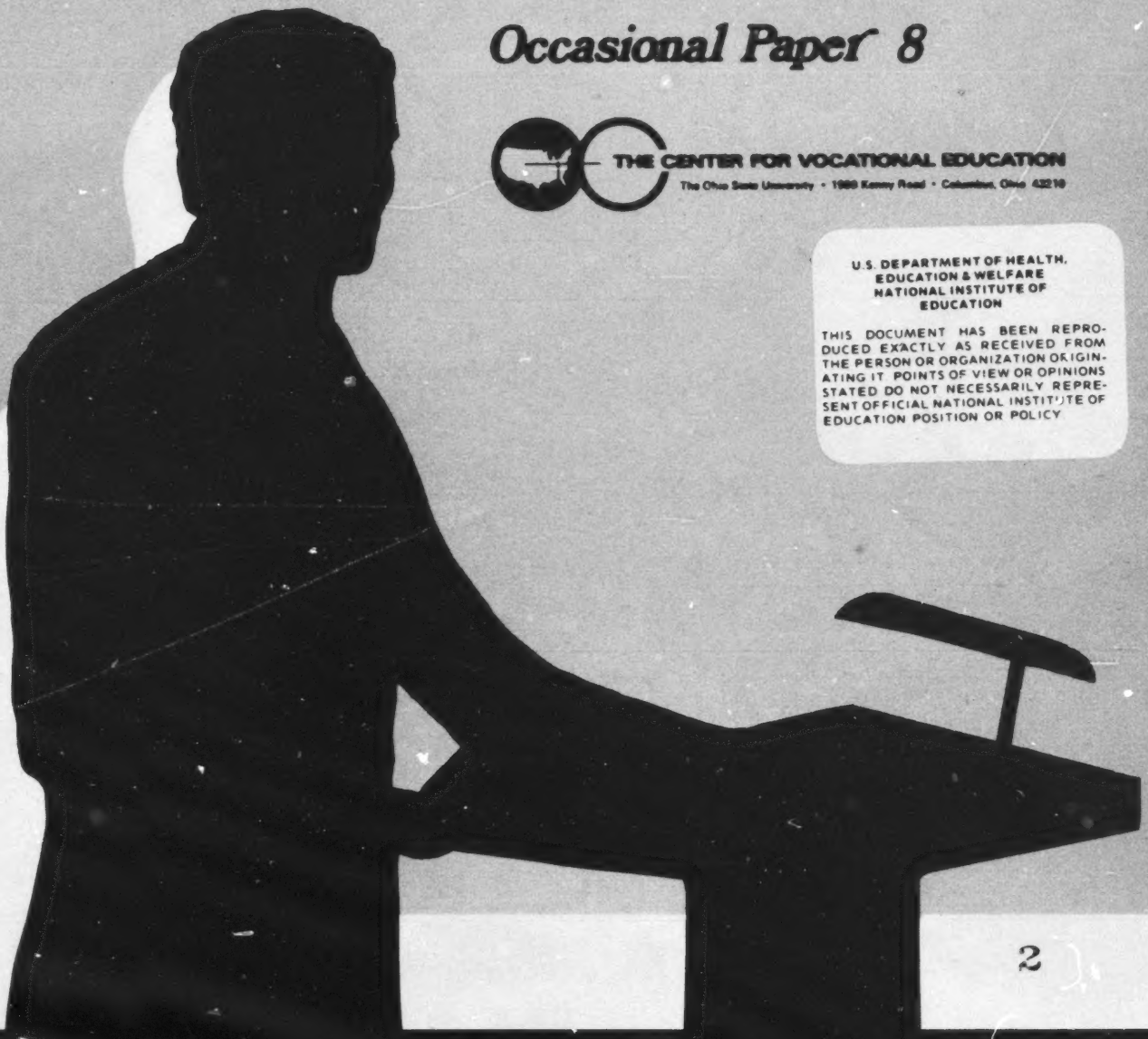

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- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

Occasional Paper No. 8

INSTITUTION-BUILDING IN TECHNICAL ASSISTANCE: THE DESIGN PERSPECTIVE AND SOME IMPLICATIONS FOR RESEARCH AND DEVELOPMENT IN INTERNATIONAL EDUCATION

by

William Siffin

The Center for Vocational Education
The Ohio State University
Columbus, Ohio 43210

1975

PREFACE

The Center for Vocational Education extends its sincere gratitude to Dr. William Siffin, Director, International Development Research Center, Indiana University, for the presentation of a Staff Development Lecture at The Center for Vocational Education presenting his perspectives on international education.

Dr. Siffin has extensive experience and background in international education both as a result of his present responsibilities and past involvement in the international development arena.

Dr. Siffin's lecture describes the portents of "institution building" as a concern in the field of international technical assistance and its implications for research and development in vocational education.

A native of Cleveland, Ohio, Dr. Siffin received a Bachelor of Science degree (1943) from Indiana University; Master of Science (1948) from the University of Minnesota; and the Doctor of Philosophy degree (1957) from Harvard University. He began his career as an administrative staff officer and analyst from 1944 to 1948. Dr. Siffin served from 1950 to 1952 as Director of Research, Kentucky Legislative Research Commission. While with Indiana University, Professor Siffin has served in the roles of Director (half-time), Institute of Training for Public Service from 1952 to 1957; Director of Graduate Studies, Department of Government (1961-63); connected with Carnegie Faculty Seminar on Political and Administrative Development as acting director, co-ordinator (1962-64); and Director of Graduate Program in Political and Administrative Development since 1965.

Dr. Siffin has written an extensive number of articles for professional journals and chapters for books on the topic of business administration and economic development. In 1973 he was co-editor and contributor for the book, *Organization Theory and International Relations.*

The Center for Vocational Education is honored in sharing with you Dr. William Siffin's presentation, "Institution-Building in Technical Assistance: The Design Perspective and Some Implications for Research and Development in International Education."

Robert E. Taylor
Director
The Center for Vocational Education

INSTITUTION-BUILDING IN TECHNICAL ASSISTANCE: THE DESIGN PERSPECTIVE AND SOME IMPLICATIONS FOR RESEARCH AND DEVELOPMENT IN INTERNATIONAL EDUCATION

W. J. Siffin*

Institution-Building: An Introduction

In the years after World War II it didn't take long to learn that the Marshall Plan approach to economic rehabilitation wouldn't work in various poor countries of Latin America, Asia, and Africa. In education, health, agriculture, transportation, law enforcement, communications, marketing, defense, public administration, and policy making, the typical LDC (which can be translated either: Less Developed Country or Largely Dependent Country) was devoid of much of the institutional apparatus common to the countries with high levels of production and consumption. Some would-be developers called for efforts to build such structures. Others urged economic development through investment and industrialization as the best route to modernization. Some recommended both approaches.

Along with much talk and writing, there was considerable action. That action was not impelled by a clear consensus on ways and means and ends, but by disparate if not entirely incompatible impulses. These ranged from pressure to dispose of American agricultural surpluses to the need to spend rather large sums of money rapidly in the service of development and diplomatic aims. Needs to spend money produce alacritous and often imaginative responses by those who wish to help. By the middle 1950's American land grant colleges were helping establish "the land grant model" in far-flung outposts of the agricultural world. American public administration programs were helping build public administration institutes in seventy countries. American professional educators were building or rebuilding vast arrays of organizations from entire universities through colleges of education to primary and secondary systems of education. Specialists in cooperatives were promoting cooperatives in the LDC countrysides. And so it went, in a dozen or more fields of specialization, in the latter half of the 1950's, in most of the 1960's, and into the 1970's.

Now, in our culture, when there is action there is always someone who wants to study that action—to describe it, critique it, and to try to rationalize it. The rationalizers are among the camp followers of action. They are especially active when things aren't going as well as desired.

By the end of the 1950's it was obvious to planners, programmers, performers, and evaluators of action that things were not going too well. The results of investment and industrialization strategies were undermining some of the fondest assumptions of economic theory. Efforts to build

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institutional infrastructure were coming, if not to naught, then too often to perversions and frustrating formalisms. Early in the 1960's a group of academic visionaries responded to this situation by establishing a consortium, the Interuniversity Research Program on Institution Building, which became known by the inelegant acronym of IRPIB. The universities, all involved in various institution-building technical assistance projects, were Indiana, Michigan State, Syracuse and Pittsburgh. The consortium, funded by Ford and later by the International Cooperation Administration, (now AID), mounted some forty studies of institution-building ventures before running out of money at the end of the 1960's.[1] It published a number of papers and one volume: *Institution Building and Development*, Joseph Eaton, (ed.) Sage Publications: Beverly Hills-London, 1972.

The group's efforts drew coherence from a "model" or perspective. This perspective viewed an "institution" as a combination of an organization and a set of linkages with its environment—enabling, functional, normative, and diffuse linkages. Key features of the organization itself were perceived as leadership, doctrine, program, resources, and internal structure. Any proper institution-building effort was supposed to deal with these nine factors.

The basic posited problem was to do so in ways that (a) would inculcate appropriate new norms in the actors within the system, so that (b) the arrangement could have a constructive normative effect upon its environment.[2]

This institution-building perspective met with considerable acceptance in various quarters. From the view of a hard-nosed social scientist, this may be puzzling—but only if that social scientist is relatively narrow-minded and equally conventional. The needs and expectations of practitioners do not always fit the standards of social scientists. Earnest and dedicated practitioners of development knew that "institutions" were crucial to development; therefore institution building mattered. The IRPIB perspective might not explain anything; it did identify certain factors that might otherwise be ignored. Factors like linkages.

The IRPIB program asserted the importance of these factors. It illustrated them in a variety of case studies. It promoted attention to them in talk and writing. It influenced the perspective of a large and costly study of American experience in developing agricultural institutions overseas. That study, conducted by another dedicated set of American university personnel, documented the concrete problems encountered in efforts to build agricultural research, teaching, and service institutions in developing countries.[3] It stressed the importance of institution building as a feature of technical assistance.

In 1970 a group of leaders in the Agency for International Development concurred in the judgment that more knowledge of institution building was needed, along with knowledge of other

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[1] These are abstracted in Melvin Blase's *Institution Building: A Source Book*, 1973, distributed by PASITAM.

[2] Esman, Milton, "The Elements of Institution Building" in *Institution Building and Development*, Joseph Eaton, (ed.).

[3] *Building Institutions to Serve Agriculture*, A Summary Report of the CIC-AID Rural Development Research Project, Purdue University, 1968.

aspects of "technical assistance methodology." And a proposal from the Midwest Universities Consortium for International Activities was approved—to establish a Program of Advanced Studies in Institution Development and Technical Assistance Methodology. A grant of $1,000,000 was made in April 1971. The object: to build within the MUCIA schools (Illinois, Indiana, Michigan State, Minnesota, Wisconsin and now Purdue and Ohio State as well) an enlarged capability to help build institutions and otherwise improve the modes of technical assistance.

The enthusiasm reflected in this grant decision was not unqualified; nor was the response clarion clear. There were, in fact, large difficulties and disagreements, and the better part of two years elapsed before some semblance of a coherent line of action began to emerge. A brief discussion of that line brings us to our present situation.

The "Design" Perspective

The AID people who supported the institution-building grant wanted, among other things, a new and better model. Their essential concern was increased prescriptive power. "Tell us how to do things better, within the confines of our own immutable realities, which include influence rather than control in our collaboration with host country organizations, and other large constraints—constraints ranging from Congressional prescription and American political realities to the characteristics of our own organization."

The events of the past four years demonstrate that there is more than one plausible way to respond to such a concern. One might mobilize knowledge about the various categories of the original institution-building perspective—as some would prefer to do. One might develop a systematic and sophisticated quantitative approach to policy analysis, as the basis for better decisions precedent to institution-building adventures, as a group with MUCIA desired. Our own approach is less pretentious than the latter, and more interesting—and promising—(to us) than the former.

If that approach has some equivalent to an axiom, it is this: the crucial concern in institution-building efforts and in technical assistance generally is a concern with design—the design of effective action "systems" ("arrangements" if you prefer). Effective means workable and generally consistent with intent, so that design encompasses implementation. It encompasses evaluation as well, because effectiveness and its causes are not necessarily obvious as the action proceeds.

We therefore took as our inspiring question: What is pertinent to the design of effective arrangements within the domain of technical assistance, given that developmental objectives of one kind or another are intended, and that the pertinent arrangements are always in some fashion "organized?"

Of course, the original institution-building perspective was a set of assertions about what is important to effective design—leadership, doctrine, program, resources, internal structure, and enabling, functional, normative and diffuse linkages. The IRPIB studies did not challenge these assertions—the studies demonstrated and exemplified such things as the premise that "leadership is important." They presented some concrete information about leadership, about how it was shaped and operated in various cases. These studies also reported findings about the time dimensions of institutional development, even though the IB perspective asked no explicit questions about time. And they demonstrated through compelling illustration that "effective linkages are essential to effective institutionalization."

Some of our reservations about this perspective concerned its essential implicit assumption: that the asserted categories—often referred to as "variables"—are indeed the salient factors which determine success or failure in institution-building technical assistance efforts. We were frustrated, too, by the fact that, even if one accepted the categories as valid the statements made about them were quite limited in their potential for extension to other situations. The model was better suited for gathering and organizing information, and for rationalizing experience, than for analyzing it as a relatively systematic and reliable source of improved prescriptions.

In our view, the act of designing (including the implementation of a design) is always particular and to some extent unique. It is an intended response to a particular problem. (A problem is not an empirical "reality" but a "construct"—a stipulated synthesis of some perceptions of empirical reality and some judgments about the undesirable aspects of that reality, plus some ideas about a preferred alternative state of affairs.)

The stipulation of technical assistance problems is usually a complex and rather elusive process, inherently political in nature, and enormously affected by characteristics of the agencies engaged in problem "defining" and design. Problem-delineating is also affected by the contexts (task environments) of those agencies.

The appropriateness of this general design orientation seems justified on at least two grounds. One is the impact of personal experience and the attempt to comprehend the lessons of a few years in the Agency for International Development and some other encounters with developmental efforts. The other is Herbert Simon's statement, *The Sciences of the Artificial*,[4] which is essentially an illustrated argument in favor of the idea of a "science of design." "Design," Simon said, "is concerned with how things ought to be, with devising artifacts to attain goals" (p. 59).

In Simon's view, "We pose a problem by giving the state description of the solution. The task is to discover a sequence of processes that will produce the goal state from an initial state. . . . There is now a growing body of evidence that the activity called human problem solving is basically a form of means-end analysis that aims at discovering a process description of the path that leads to a desired goal. The general paradigm is: Given a blueprint, find the corresponding recipe" (p. 112). To apply this paradigm requires suitable blueprints and recipes—descriptions of complex systems—their states and their processes or dynamics. As Simon notes, we frequently deal with this need by a combination of analogy and extension (p. 115)—by reducing a problem to something approximating a problem solved.

Simon explores ways of synthesizing and analyzing complexity. He pragmatically characterizes the distinguishing property of any complex system: ". . . given the properties of the parts and the laws of their interaction, it is not a trivial matter to infer the properties of the whole" (p. 86).

Simon asserts that complex systems are frequently hierarchical in form; i.e., composed of interrelated subsystems. He offers up the brilliant concept of "nearly decomposable systems," wherein the interactions that occur among subsystems are limited in comparison with the interactions that occur within those subsystems (p. 99). He suggests that many real-world complex systems have a

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[4]Cambridge: The MIT Press, 1969.

nearly decomposable, hierarchic structure (p. 108). And he notes that, insofar as complex structures are redundant[5] and reasonably orderly, they can be reduced to rather parsimonious descriptions.

This doesn't tell us how to design anything. It does, however, lay a conceptual groundwork for beginning to think about important properties of things to be designed, or to be analyzed in the process of design.

Simon's sciences of the artificial are intended as the means for developing "correlations between goals in the sensed world and actions in the world of process" (p. 111). The aim of this quest, for adaptive organisms, is to find the differences between existing states and preferred states, "and then to find the correlating process that will erase the difference" (p. 112).

Alas, Simon inspires more than he enlightens. He adds credibility to a general concern with design. He suggests a way to begin to think about some of the phenomena we believe we must address. He identifies our own generic interest in those phenomena: to find the difference between existing and preferred states, and then to determine, in a satisfying fashion, how to mitigate that difference. He then departs in a burst of intellectual glory, leaving us faced with a difficult trip down the mountain, sans any workable prescriptions written on stone tablets.

Nontheless, this design perspective has helped us address our own design problem. It offers the beginnings of an answer to our basic question, which is simply: "What to do?" Within this admittedly gross design perspective, we committed ourselves to producing and disseminating useful prescriptive statements, or the basis for them, to clients engaged in design, implementation, and evaluation, and in the study of these things. These in effect are the capabilities we seek to produce within the Midwest Universities Consortium in accordance with the terms of our grant.

To us, design means the identification, establishment, and application of interventions that will (probably) change one state of affairs into a preferred condition. We mean the contriving of workable problem-solving arrangements—in certain kinds of circumstances, under conditions that are to some extent knowable. In seeking to address the problems of design we assume that one of the greatest, if not the greatest, source of error and frustration in the field of technical assistance—as in many fields of social action—is faulty design.[6]

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[5] A system may be redundant in being composed of only a few different kinds of subsystems in various combinations and arrangements. If nearly decomposable, only important relations among components need be identified (rather than all possible or extant interactions). By auspicious coding, the literal pattern and its components can be reduced to a description of the thematic property of the pattern (p. 110-111).

[6] Faulty design is the retrospective assessment of why all sorts of actions go wrong in the world: high-rise public housing in St. Louis (which was town down) and in Bedford-Stuyvesant (which was not); the cargo compartment locking mechanism of the DC-10; many facets of U.S. action vis-a-vis Vietnam; myriad efforts to establish educational arrangements in developing countries; some efforts to disseminate high yielding rice varieties in the Philippines; and countless other situations. Where design deficiencies stem from ignorance, knowledge can contribute to error reduction, which is the prime aim of improved design. Where misfortunes stem from inherent and ineradicable properties of the arrangements for designing, knowledge may be irrelevant, unless it is somehow linked to power to modify the arrangements.

Simon's focus is problem solving. At some point, in some fashion, a problem—more precisely a "concern" or proto-problem—appears upon the scene and design commences. When one is committed to actual design, the initial question is: What is that problem?

Daniel Moynihan once asserted that "There is no lie so foul as an ill-defined problem!" The imprecision of his statement is shadowed by its import. Problems are not defined. They are specified, through the imposition of knowledge and judgment upon a perceived situation. Faulty perception of the actual state and workings of the situation, erroneous judgments about the feasibility of intervention, and/or inappropriate criteria for stipulating what is wrong and what would be better—these are the properties of an ill-defined problem.

Design encompasses the problem of delineating problems, in the terrain of our interests and responsibilities. Simon offers some ways to think strategically about the empirical aspects of a problem. He does not much help us with the normative dimensions. His approach to the reduction of imperatives to declaratives is a logic for evaluating solutions (p. 58-66). Our agenda extends back to initial judgments about the possible need for a solution. This involves the imposition of a value judgment upon a perceived or assumed state of affairs, an act which is essentially an exercise in political decision making.

Political decisions are not subject to the norm or standard of rationality. They need not be arrived at by inference or deduction. Typically, political decisions are reached through accommodation, the process of balancing or otherwise relating inconsistent positions. Political decisions do not have to stand the test of being right according to some higher order of measurement.

Yet political decisions can be judged in terms of the possibility of their being wrong: A wrong political decision is one that leads to consequences inconsistent with the intents embedded within it. An ill-defined problem is often one that applies the wrong norms or standards to a situation, or applies faulty assumptions about the characteristics of a preferred alternative. (This is a distinct possibility when the decisions are made without much representation of the people who are in the situation.)

Given such concerns—with the need to comprehend complex systems, the need to address the question of changing such systems, and the need to say how to delineate the problems to which design is the response—you can see the makings of an intellectually interesting and practically impossible commitment. As one of my colleagues has said: "None of this helps me very much. I need some workable answers to some practical questions: Design of what?—products, organizations, effects? Design under what conditions? Design by whom? I need some models of processes. How does design actually proceed? How might it actually proceed?" His are the kinds of questions that we must in practice be able to answer.

The Effort to Put the Perspective into Action

Just as the practices in any religion are incomplete and suboptimizing arrangements for enacting a system of belief, our practical approach to design is considerably more pragmatic and un-ideal than our grand vision. We submit only that there is a real relation between the two.

As a first step toward getting practical, we asked: What must be known if a problem is to be stated in a way that is likely to lead to a plausible design?

Our general answer to this question has two parts: First, we need to know about the workings and propensities of the mechanisms involved in actual problem delineation and design efforts. A design praxis has to fit its context, lest we end up recommending water wings for alligators, while the thematic orientation of the active design mechanisms is toward making camels fly. Of course, our reading of this environment might lead to the conclusion that the situation is impossible—that the environment is essentially inconsonant with our sense of what is involved in the incremental rationalization of design.[7] To thus conclude would be to judge ourselves irrelevant, a feat to be avoided whenever possible. We dispose of this possibility through a saving hypothesis: In our environment of interest, it ought to be possible to help improve design—(else, why did they give us the money?).

Once across this bridge, we face a second question about the complex systems of action that concern us: What factors, or features of the "design situation" must be identified and dealt with?

For our working purposes the answer has four elements: Goals, environment, technologies, and organizational arrangements. By goals we mean possible alternative states of affairs. The environment consists of the salient empirical properties of the situation that is being (or might be) judged undesirable—inciuding knowledge of the relevant processes that are part of that state. Technologies are the tools that might be used as interventions—tools whose properties and probable effects can be specified with relatively high reliability. And organizational arrangements, practically a residual category, consists of the kinds of phenomena that the original institution-building perspective sought to encompass, the partially contrivable arrangements of collective human activity that might serve as instruments by which to carry out an intervention. These four kinds of factors can be viewed as interdependent. In some fashion they are always addressed in efforts to design a continuing action system. Assumptions and choices are made about these things.

To become operational within our general sense of mission, we had to specify the set of design activities that would concern us and decide how to deal with them.

First, we acknowledged that the major fields of interest to important agencies in the field of technical assistance include agriculture (and more largely rural development), education, health, and population control, the transfer of science and technology, and the development of practical planning and design capability (e.g., project analysis). Within these fields, as they apply to LDC situations, we would find our substantive issue and problem areas. Or to reverse the statement, our design contributions would have to pertain to real-world circumstances in one or more of these programmatic fields.

Second, and as already noted, we recognized that the properties of the actual design arrangements themselves were pertinent. When it comes to design, "elephants can only make elephants."

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[7]For example, if the design mechanisms are unable to try to minimize error in their political decision making, it will be irrelevant to attempt to improve the design process.

Design agencies, or participants in design such as technical assistance donor organizations, inevitably have limited design capabilities and certain design propensities or tendencies. How they design, and how certain of their characteristics affect design, is pertinent. There is little point in advising the impossible, or in finding the given realities untenable. Our prescriptions have to be relatively compatible with the realities and potentialities of the design organizations we seek to serve. To this statement there is one significant exception: Insofar as our approach to design addresses academic realms it is less constrained by the realities of the moment, and there is justification for disseminating knowledge whose implications may be beyond the capacities of existing design agencies.

We do not take the design agencies as immutable givens: Some opportunities for improved design depend upon changes in their characteristics. For example: In the field of international technical assistance there is a strong tendency to let the problem be defined in terms of a relatively narrow set of available technologically oriented "solutions." Problems tend to be stipulated by the entrepreneurial technicians who, within their jurisdictions, present "solutions" based upon their technological perspectives. Given the conditions of novelty, indeterminacy, and sometimes insolubility of the worldly situations treated as problematical, this is not entirely bad. It is not entirely good either; and it raises questions about opportunities for improving the work of the "design designers."

Third, we adopted an approach to knowledge building within the broad but not entirely obscure boundaries of our working universe that is guided by the following assumptions:

1. It is better to be opportune than exhaustive. Any one of the empirically identified areas of concern to us contains more potential demands for knowledge than we could ever begin to supply. So, within and among these areas, look for "key problems"—interesting problems that offer some possibility of improved delineation and attack.

2. Assume that most, if not all, of the knowledge we can use already exists. A $1,000 synthesis and adaptation of an established set of useful premises is worth more than a $5,000 paragraph of new knowledge produced by a fresh piece of research. In practice, we are concerned with searching for knowledge that can be assessed, linked with other premises, carried from the domain of its development into the fields of our concerns, and at least tentatively adapted to the seeming needs of prospective users. Just one passing example: an economist at the University of Wisconsin, interested in the comparative study of management in the West and also in the Centrally Planned Economies of Russia and Eastern Europe, has done some creative study of the phenomenon of suboptimization. He identifies certain factors which, within his sample, tend to promote or deter suboptimizing tendencies in organizations. Our task: Take his findings and explore the possibility that they might apply to organizational aspects of design in some of the areas of our concern.

   Another example: a dissertation study of two international organizations for the transfer of genetic technology in agriculture uncovered an apparent correlation between features of the training programs of these organizations and the post-training professional behaviors of the LDC nationals who were trained. In one case trainees tended to do field-application relevant research after they returned home. In the other case, former trainees tended more toward paper-publishing research. Question:

Is there a lesson here that might apply to the design of such international organizations of which there are currently more than ten? Is there a further generalization about design lurking here?

3. When there is a trade-off between potential utility and analytical rigor, be careful but bias in favor of utility. Lessons are likely to be more attainable, and more useful than impeccably validated hypotheses.

   Example: A study of 25 cases of land reform programs suggested that, if these arrangements were classified into three types according to one general classifying criterion, each type tended to produce a distinctive set of effects. Many questions might be asked about this finding: How comparable and additive were the cases? How precise were the reported data? How reliable were the assessments of effect? Yet the knowledge increment produced by the study considerably enlarges our practical understanding of an important aspect of a particular kind of design. Emphasize the findings, note the probable implications, and add appropriate qualifications.

4. Recognize that in the final analysis practical design includes large measures of art as well as politics. At times, concepts themselves are valuable tools for artists—sensitizing tools, that give focus to subjective judgment and enlarge the agendas of those who must design. This, in fact, explains the appeal of the initial institution-building perspective. A number of practitioners have asserted that the idea of "linkages" was helpful to them. It raised questions that might have otherwise been overlooked. Even more powerful explanatory statements are, at best, only going to be incrementally effective as factors in the process of design.

5. Given the fragmentary, contingent, and incremental qualities of our inputs, use multiple channels of dissemination; and seek to disseminate by establishing credibility and responding to (or helping make manifest) real needs. Some of the most promising needs appear to lie in the field of training, including the development of materials that can be used in training by others. Donor agencies are important targets. So are institutes and other organizations engaged in training and educating prospective planners and managers in and for developing countries.

6. Stay out of well-established, conventional domains of competence, in training, in analysis, and otherwise. Instead, seek complementarities. For example, there is a veritable technology of "project analysis," and it is taught by highly competent persons. There is something of a technology of "sector analysis," too, particularly with regard to the agricultural sector. And there are other planning and design techniques, just as there are elaborate and quantified techniques of management decision making. Yet such tools are limited in power and scope. They do not address certain organizational factors. They do not examine certain aspects of task environments. Rule: Seek to make contributions in the areas that complement established techniques.

7. Doubt with assurance, and realize that in some ways everything prescriptive is likely to be a suboptimization. This of course is not a very respectable premise,

and perhaps it ought not be mentioned. Yet as we attempt to examine the ways in which design actually does occur, we are always confronted by the possibility that any of our statements is likely to be irrelevant, or trivial, or both. Given the imponderables, the constraints, and the compulsions involved in the intended design of effective systems of action within the field of technical assistance, there is the possibility that, in saying something about how a line of design might be improved, we may be whistling Dixie. Yet we must assume, in the last analysis, that if elephants can only make elephants, our intended clients are not elephants but individuals and organizations of individuals with a certain propensity for learning and adaptation. We must assume too that we can provide premises worthy of being learned and used. It is much easier to make and act upon such assumptions in a conventional academic domain than in the task environments we perceive as pertinent. Try to act we must.

Question: What Might This Mean to You?

Some of you at The Center for Vocational Education may find our views and efforts interesting from a purely academic perspective. The Center, however, is not a purely academic enterprise.

The Ohio State University is in the process of becoming a member of MUCIA. Our program, the elegantly labelled Program of Advanced Studies in Institution Building and Technical Assistance Methodology (PASITAM for short and for mercy), is one part of MUCIA, the Midwest Universities Consortium for International Activities. Our program involves participation by appropriate volunteers within the MUCIA schools. We encourage the establishment of seminars that focus upon subjects that pertain to our agenda. A professor of industrial engineering and a political scientist at Wisconsin are, for instance, designing a seminar on the politics of technology transfer. If their effort gets anywhere, they will probably request from us modest support with which to pursue one or more promising lines of analysis. (Note: not original research, but inexpensive analysis.)

A postdoctoral fellow at the Indiana University School of Business is preparing for us a multidimensional classification of certain kinds of technology—with particular emphasis upon industrial technology. We hope it will contribute to the ability to make statements about certain practical problems of technology transfer. To get this statement and some other things we made a modest partial contribution in support of his dissertation research in a developing country. Not because we were interested in the dissertation per se (we are disinclined to support dissertation research), but because we believed that, as a quid pro quo, he could make a useful contribution to an area in which we have a particular interest.

It is possible that some of your interests and ours might coincide. We have, frankly, done little within the field of education. Yet education is an area of large effort and expense, profound importance, and a vast wasteland as well, within the domains of technical assistance. We are not interested in underwriting any large novel investigations. We are in a position to make modest contributions to things that people want to do anyhow, things that fit our bias.

We might be of other assistance, assistance whose lack of palpability could be offset by its flexibility and its potential relevance to your interest in designing and doing worthwhile and reasonably

well-funded projects. There are needs in the field of technical assistance for which you may have distinctive talents. Here are only the thinnest of sketches of a couple of those possibilities.

First, there is the matter of vocational education and the rural poor. God bless the rural poor; they are a paramount concern in the Agency for International Development; Congress has mandated attention to them. The profound and in some cases probably impossible question is: What to do about them? Part of the answer certainly lies in the actual application of certain technologies that are being developed, refined, adapted, and in some instances actually transmitted to prospective users. The international intermediaries mentioned earlier are important mechanisms in such transfer efforts. Their effectiveness depends, of course, upon events outside their spheres of direct action. If certain kinds of attention to vocational education were parts of the agendas of these intermediaries, their effectiveness and their second-order impacts might be enhanced. Some modelling studies might be in order, although I am not aware at this moment that anyone is clamoring for them.

There may be other possibilities. Recently a member of the AID agriculture staff asked: Just what are appropriate ratios between extension workers and farmers? He noted that in some projects the ratios were as little as one to 100, and in others one to 2000. The question is primitive, but not its import. If in some parts of the world vocational education is in part an extension service type of enterprise, what are the factors that bear upon this question of ratios?

There are other interesting questions. What, for instance, are some innovative and distinctively promising approaches to the design of really effective vocational educational arrangements for the industrial sectors of developing nations—or particular subsectors? It is my impression that much of the so-called vocational education conducted in the world of the LDCs within the framework of the national school system is more or less a disaster, a repository of dropouts from the academic tracks who are processed by instructors of mixed competence for non-existent roles. In one country there is, for example, a textile institute which prepares technicians for roles in the cotton textile industry because that is what has been known there. It appears to be the wrong industry, since synthetics now predominate, and the institute has been described as a closed system distinguished by irrelevance.

What are some of the more promising models, or designs, for effective vocational education in LDC settings? I have heard surmises; I have vague impressions of arrangements that seem to work. More often than not they are job-related rather than school-centered. Certainly there are important needs for analysis and improved design here. I suspect that the designs would not focus so much upon large-scale school-oriented training as upon the use of vocational education as a direct adjunct of technology transfer and industrial development projects. I really don't know. I do know that millions of dollars are going to be spent and lent for technology transfer and industrial development, and that the international development banks should be interested.

Finally, I know that PASITAM—and even more the headquarters of MUCIA—can help in the exploration and pursuit of such possibilities as these. PASITAM would have an intense interest in the lessons of any adventures you might essay; and in helping promote the application of such lessons.